

## CUSTOMER CASE STUDY

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Real-time information ensures the most affordable, efficient and safe drilling of oil wells, which is why PML Exploration Services relies on the built-in features of AVEVA™ Edge

PML Exploration Services - [www.pmls.com](http://www.pmls.com)  
Industry - Oil & Gas

### Goals

- Provide a cloud-based solution with web-based applications to give real-time information.
- Enable customers to have ready access to critical data, even while in remote locations.
- Efficiently translate application user interfaces and reports into other languages.

### Challenges

- There were no systems in place to provide current information to the wellsite.
- Delays were as long as 12 hours between the actual analysis and reports provided to customers.

### Solution

- AVEVA Edge

### Results

- Well-drilling operations can enact changes based on real-time data that will help meet safety codes and protect the integrity of the well.
- The cloud-based solution provides customers with both time and cost savings.
- The solution provides geosteering of the rock bit, ensuring the client's wellbore is accurately and safely placed.

## PML offers customers vital gas analysis data in real-time

**Oklahoma city, Okla.** – When drilling wells for oil or natural gas, the safety of the employees and the integrity of the well are some of the foremost concerns. PML Exploration Services LLC provides gas analysis in real-time, thanks to the extensive web-ready tools available in the AVEVA Edge. With these tools, PML can help well operators optimize their time, protect their investment in the well and ensure the safety of the operation. It offers up-to-the-minute gas analysis and detailed, web viewable geological information.

AVEVA Edge helps companies like PML put their data in the cloud, so that rig operators and site managers can have ready access to data, even while out at remote locations, such as oil and natural gas drilling rigs. PML currently has more than 60 active systems that can be placed across the country to deliver rapid-fire results that site managers can review on devices such as smartphones, tablet computers, and even through text messages and SMS.

With real-time data, PML can put information right on the client's desk, even when monitoring multiple sites. Cost-saving changes such as the speed, direction, and loads of the drill can be put into effect the moment relevant information is available, making the entire process much more affordable, safer, and more efficient.

### Addressing delays in reporting wellsite stats

When PML initially began analyzing and providing gas and geological information at the rig, there were no systems in place to provide current information to the wellsite managers and remote office staff overseeing the drilling of the well.

Reports were provided twice a day in order to update the rig and office staff on gas and geological conditions. Delays could be as long as 12 hours between the actual analysis and the report provided to PML's clients.

These reports contain critical information regarding crude oil and natural gas deposits, as well as critical rock structures that must be isolated for safety and production reasons. Continuous monitoring of the gas components and their quantities, plus correlation with drilling information is critical for safety. In addition, timely decision-making ensures maximum ROI (return on investment) for a given well.

Time delays between presenting the reports and adjusting the drilling system to the specifications required to make use of the data can cause problems. They can potentially put the structural integrity of the well in danger. Customers requested a system that could provide information on a much more current basis.

### Providing critical real-time information with AVEVA Edge

In order to provide well operators with real-time information that would allow them to drill more safely and efficiently, PML began looking for a solution that could make use of cloud technology and web-based applications. AVEVA Edge was a clear contender for this type of SCADA application, due to its ability to easily configure web-based solutions.

Another important factor considered when choosing the SCADA software, was international accessibility. PML is a U.S.-based company with plans for expansion into the international market. In order to efficiently translate application user interfaces and reports into other languages, they needed SCADA software that could handle simple, customizable translations and engineering units.

AVEVA Edge supports Unicode fonts capable of many different character sets ranging from the Latin alphabet to Cyrillic and Greek fonts to Chinese characters and Japanese Kana. One-click translation makes it easy to translate the entire application to another language.

## AVEVA Edge effectively manages oil wellsite information

AVEVA Edge was chosen by PML as the SCADA software best able to meet the needs of their clients.

AVEVA AVEVA Edge enables OEMs, panel builders, and end-users to quickly create intuitive, secure, and highly maintainable HMI applications for intelligent machines, and on a variety of small-footprint devices such as cell phones and PDAs using embedded operating systems.

Customers can seamlessly integrate machine and panel data directly into the Supervisory HMI system, making machine information more accessible to operations and management for a broader understanding of the entire operation with greater control, faster response times, higher operating efficiencies, and lower total cost of ownership.

### AVEVA Edge in action on the rig

Approximately 60 active rigs use AVEVA Edge's Web Studio solution for data acquisition, control, and display of wellsite information. Data is monitored constantly by PML employees at the wellsite, as well as being sent directly to the client's and PML's supervisors' desks over a satellite connection. The well operator can keep track of changes by using the web thin client and pulling reports from the cloud.

The process begins with the rig systems used by PML. These mobile units consist of portable trailers where the employees assigned to the well can observe continuous gas analysis and drilling information, plus perform a detailed analysis of geological samples from the wellbore. The AVEVA Edge SCADA software is installed on a 17" laptop coupled with a 24" monitor that acts as the local server.

PML's portable gas analyzer, controller, and data acquisition solution incorporate a PLC. The PLC at the rig communicates with IWS via Modbus communications. From the rig, PML employees track changes in total gas, gas constituents, drilling information and geological conditions using the chart and trending functions in the software.

The data from the SCADA software is then sent via satellite connection to the cloud, where it can be viewed via web thin clients. These features are easy to configure in AVEVA Edge.

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“One of the main advantages of AVEVA Edge was that we didn't have to write code for cloud based technology from scratch. It was all right there in the software. That allows us to put the information directly in the hands of the customer, by providing a good Web solution.”

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**John Parsons**

President and CEO of PML Exploration Services

The Studio Mobile Access (SMA) solution, aligned with the remote alarm notification features of AVEVA Edge (via email or SMA), allows PML to notify their customers about critical conditions (alarms). Upon notification, the users can log to the system via any smart mobile device such as iPhone, Android, Blackberry, or Windows Phone 7, and monitor the critical variables of their wells.

Information retrieved from the analysis is also transmitted to SQL databases and is then stored there for traceability and historical information. AVEVA Edge has a patented method of communicating with SQL databases that makes it uniquely able to send and receive data from relational databases with easy configuration.

This is another way in which development time for preparing an AVEVA Edge solution is greatly reduced, which makes it easy for customers like PML to develop powerful applications in a short time.

The native and flexible security system built-in to AVEVA Edge allows PML to consolidate data from several wells in the cloud, but control remote access to the data based on the credentials (user name and password) of the user logged on the remote Web Thin Client (Web browser).

With AVEVA Edge, PML was able to adopt the SaaS (Software as Service) model, offering remote access to meaningful information in real-time to their customers (end users) rather than a proprietary, isolated, and eventually depreciated system.



## Cloud-based data safeguards wellsite operation needs

The result of this partnership between PML and AVEVA Edge is a SCADA solution for gas, drilling, and geological analysis that is able to meet the growing demand for cloud-based information. The data captured helps site managers in oil and natural gas well-drilling operations to enact changes based on real-time data that will help them meet safety codes, save time and cost in drilling, and protect the integrity of the well.

The web solution provided by AVEVA Edge has made PML highly competitive in geological and surface logging and allows them to stay ahead of the curve in the industry.

Because AVEVA Edge applications are always compatible with new versions of the software, PML will be able to keep pace with new technology, even as PLCs and other equipment change. Because IWS offers over 240 drivers that communicate with every major brand of PLC, as well as offering OPC support, it is easy to configure an application to communicate with new combinations of equipment.

It even allows dissimilar devices that would not ordinarily be able to share data to use IWS as a bridge to send data back and forth.

With the EDGE System, PML innovated and leveraged the technology provided by AVEVA Edge as an enabler for their core competency (well drilling) and created a sustainable competitive advantage in its industry.

The ease of translation and Unicode fonts supported by AVEVA Edge also give PML the flexibility they require in making a national business international. PML intends to further develop its system with AVEVA Edge to provide real-time geosteering of the rock bit to ensure the client's wellbore is accurately and safely placed for optimum return on investment.

PML's ability to share, in real-time over the web, information that includes wellbore characteristics such as gamma-ray, liberated gas components, lithology, penetration rates, and directional information with key stakeholders will add significant value to their suite of evolving solutions.